SoftMotion: DriveInterface: CopleyAccelnet

Last update: 16.04.2007

Hardware interface	CAN; must support 3S_CANdrv.lib
Supported drives	Copley drives (Accelnet, Stepnet, Xenus) Firmware >= V2.4
Runtimes	x86
Author	Hilmar Panzer
Components	CopleyAccelnetDrive.lib; 3S_CanDrv.lib; SM_CAN.lib; SysLibCallback.lib; SysLibFile.lib
Version	1.9.3.0

CONTENT

1 Parameters in PLC config

1.1 BusInterface

wParam1	Not used
wParam2	Not used
dwParam1	Not used
dwParam2	Not used

1.2 AxisGroup

wParam1	CAN channel No (typically 0)
wParam2	Baudrate in kBit (125, 250, 500, 1000)
wParam3	SYNC generator: 0: PLC generates SYNC (only possible if PLC is highly precise); 1: 1st drive generates SYNC 2: SYNC device generates SYNC (additional hardware needed)
wParam4	Not used
dwParam1	Reserved
dwParam2	Reserved
dwParam3	Not used
dwParam4	Not used

1.3 supported Drive.wControlType

T / - no	V/V no	V/P no	P/P no	PV/PV yes	V/- no	CONF yes

The cyclically sent data must consist of: fSetPosition/fSetVelocity.

The received data can consist of: fActPosition, fActVelocity, fActCurrent.

2 Features

- **RegulatorOn**
- Detecting and acknowledging **errors**
- **reading/writing** SoftMotion and **drive parameters** (to access index 0xaabb subindex 0xcc with length 0xdd in byte (only necessary for writing) use MC_Read/Write(Bool)Parameter with parameter number -16#ddaabbcc)
- any **gearing factors** (dwRatioTechUnitsDenom/iRatioTechUnitsNum)
- **linear/rotary axes**
- **controlling modes (SMC_SetControllerMode)**: position
- drive internal **homing** (configure with object 0x6098 etc. or use SMC_CopleyHome)
- **configuration from file**
- **configuration from dialogs in PLC configuration**
- supported **SYNC generators** (to be set in PLC Configuration, AxisGroup) : PLC, 1st drive, SYNC-Device

3 CAN-Traffic

base load:

Telegram	*Data bytes*	*Bit length*	*125 kBit/s*	*250 kBit/s*	*500 kBit/s*	*1 MBit/s*
SYNC	0	47	0,376 ms	0,188 ms	0,094 ms	0,047 ms
high res. time stamp 0x1013	4	79	0,632 ms	0,316 ms	0,158 ms	0,079 ms
SDO	8	111	0,888 ms	0,444 ms	0,222 ms	0,111 ms
overall			1,896 ms	0,948 ms	0,474 ms	0,237 ms

per drive (without receiving actual current and actual velocity):

Telegram	*Data bytes*	*Bit length*	*125 kBit/s*	*250 kBit/s*	*500 kBit/s*	*1 MBit/s*
PDO1 Control Word (6040), OpMode (6060)	3	55	0,440 ms	0,220 ms	0,110 ms	0,055 ms
PDO2 PVT (2010)	8	111	0,888 ms	0,444 ms	0,222 ms	0,111 ms
PDO3 State Word (6041), Buffer Status (2012)	6	95	0,760 ms	0,380 ms	0,190 ms	0,095 ms
PDO4 Actual Position	4	79	0,632 ms	0,316 ms	0,158 ms	0,079 ms
overall			2,720 ms	1,360 ms	0,680 ms	0,340 ms

Without receiving the actual current it is possible to control n drives:

Cycle time [ms]	125 kBit/s	250 kBit/s	500 kBit/s	1 MBit/s
2	0	0	2	5
3	0	1	3	8
4	0	2	5	11
5	1	3	6	13
6	1	3	8	16
7	1	4	9	19
8	2	5	11	22
9	2	5	12	25
10	3	6	13	28
12	6	8	16	34
14	4	9	19	40